

## FIG. 2

CTTCTAGGGTCGTCCTCGGATGGCGGGCTCCGGTGGTGGACGCCGAGTACCTGCGCCAGGTC  
 M A A P V V D A E Y L R Q V  
 GACAGGGCGCGCCGCGCTTCCGTGCCCTCATCGCCTCCAAGGGATGCGCCCCCATCATG 120  
 D R A R R A F R A L I A S K G C A P I M 34  
 CTCCGCTCGCATGGCATGATGCTGGCACCTATGATGTGAACACAAGAACTGGTGGTGCA  
 L R L A W H D A G T Y D V N T R T G G A  
 AATGGTTCAATTAGATACGAGGAAGAGTACACCCATGGTTCAAATGCTGGCTTAAAAATT 240  
 N G S I R Y E E Y T H G S N A G L K I 74  
 GCTATTGATCTCCTTGAGCCTATTAAAGCGAAGCATCCAAAGATTACATATGCAGACCTT  
 A I D L L E P I K A K H P K I T Y A D L  
 CATCAGCTTGCCGGAGTAGTTGCAGTTGAAGTCACCGGGGGTCCAACCGTTGAGTTCATC 360  
 H Q L A G V V A V E V T G G P T V E F I 114  
 CCTGGAAGACGTGATTCGTAGTTGTCCCCGTGAAGGACGCCCTTCCTGATGCTAAGAAA  
 P G R R D S S V C P R E G R L P D A K K  
 GGTGCACCACATCTAAGGGACATCTTTTATCGAATGGGGTTAACAGACAAAGATATTGTA 480  
 G A P H L R D I F Y R M G L T D K D I V 154  
 GCACTATCTGGGGGGCACAGCCTGGGAAAGGCGCATCCTGAAAGGTCTGGGTTTGACGGT  
 A L S G G H S L G K A H P E R S G F D G  
 GCATGGACTCGTGACCCTCTGAAATTTGACAACCTCATACTTTCTTGAGCTACTGAAGGGG 600  
 A W T R D P L K F D N S Y F L E L L K G 194  
 GAATCTGAGGGTCTTCTGAAGCTCCCTACTGATAAGGCATTGTTGGATGATCCTGAATTT  
 E S E G L L K L P T D K A L L D D P E F  
 CGACGCTATGTGGAGCTTTATGCAAAGGATGAGGATGTTTCTTCAAGGACTACGCTGAA 720  
 R R Y V E L Y A K D E D V F F K D Y A E 234  
 TCACACAAAAAATTTCTGAACCTGGCTTCACACCACGGAGCAGTGGCCCAGCATCTACA  
 S H K K L S E L G F T P R S S G P A S T  
 AAATCAGATGTTTCAACTGCTGTTGACTTGACAGAGTGCAGTCGGGGTAGCAGTTGCT 840  
 K S D V S T A V V L A Q S A V G V A V A 274  
GCAGCTGTAGTTATCGCGGGCTACCTGTACGAAGCTTCCAAGAGGAGCAAGTAAGGGGTT  
A A V V I A G Y L Y E A S K R S K \* 291  
 CGTGAGTTCCTGGATGACATTCCTTATTTAGTAAGTATCAAGTTATTATTCTAAAAAAA 960  
 TAAGTGCCAAGTGCAAATAACAGAACTCTAGTGATGAACAACCAACAGTAGTCTCAAAAT  
 ATTTACATACATTCTTGAGGACATCTCCTTCATATATATACATCATACTTGAATAAAAAAA 1080  
 AAAAAAAA 1089

FIG. 2

FIG. 3

pAPX	MAAPVVDAAEYLROVDRAARRAFRAITASKGCAPIMLRRLAWHDAGTYDVNTRTGG
gAPX	MAFPVVDTEYLKEIDKARRDLRALIALKNCAPIMLRRLAWHDAGTYDVSTKTGGP
APX3	MAPIVDAEYLKEITKARRELRSITANKNCAPIMLRRLAWHDAGTYDQAQSKTGGP
pAPX	NGSIRYEEEEYTHGNSAGLKTAIDLLEPIKAKHPKITTYADLHQLAGVVAVEVTGG
gAPX	NGSIRNEEEYTHGANSGLKTAIDFCCEEVKAKHPKITTYADLYQLAGVVAVEVTGG
APX3	NGSIRNEEEYTHGANSGLKTAIDLCCEGVKAKHPKITTYADLYQLAGVVAVEVTGG
pAPX	PTVEFI PGRRDSSVCPREGRLPDAAKKGAPHLRDI FYRMGLTDKDIVALSGGHSLS
gAPX	PTIDFVPGRKDSNICPREGRLPDAAKKGAPHLRDI FYRMGLSDKDIVALSGGHSLS
APX3	PDIVFVPGRKDSNVCPKEGRLPDAAKQGFQHLRDI FYRMGLSDKDIVALSGGHTL
pAPX	GKAHPERSGFDGAWTRDPLKFDNSYFLELLKGESEGLLKLPDCKALLDDPEFRR
gAPX	GRAHPERSGFDGPPWTNEPLKFDNSYFLELLKGESEGLLKLPDCKALLDDPEFRK
APX3	GRAHPERSGFDGPPWTQEPKFDNSYFVELLKGESEGLLKLPDCKTLLDDPEFRR
pAPX	YVELYAKDEDEVFFKDYAESHKKLSELGFTPRSSGPASTKSDVSTAVVLAQSAVG
gAPX	YVELYAKDEDAFFRDYAESHKKLSELGFTPTSARSKVMVKD-ST-V-LAQGAVG
APX3	LVELYAKDEDAFFRDYAESHKKLSELGENPNSAGKA-VAD-STI--LAQSAFG
pAPX	VAVAAAVVIAGYLYEASKRSK
gAPX	VAVAAAVVILSYEYEVKRMK
APX3	VAVAAAVVAFGYEYEVKRMK

APP. N. FILING DATE: JUNE 1, 2001

Ti PEROXISOMAL ASCORBATE PEROXIDASE GENE IN  
TE. SATURE STRESS AND A TRANSGENEIC PLANT EXHIB  
THERMOTOLERANCE

INVENTOR(S): TETSUKO TAKABE

APPLICATION SERIAL NO: UNASSIGNED

BY HIGH

SHEET 4 of 9

## FIG. 4

1 2 3 4 5

(Kbp)

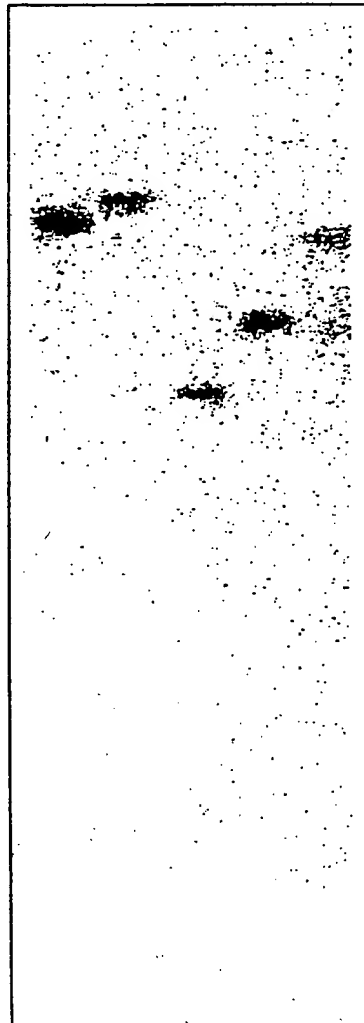
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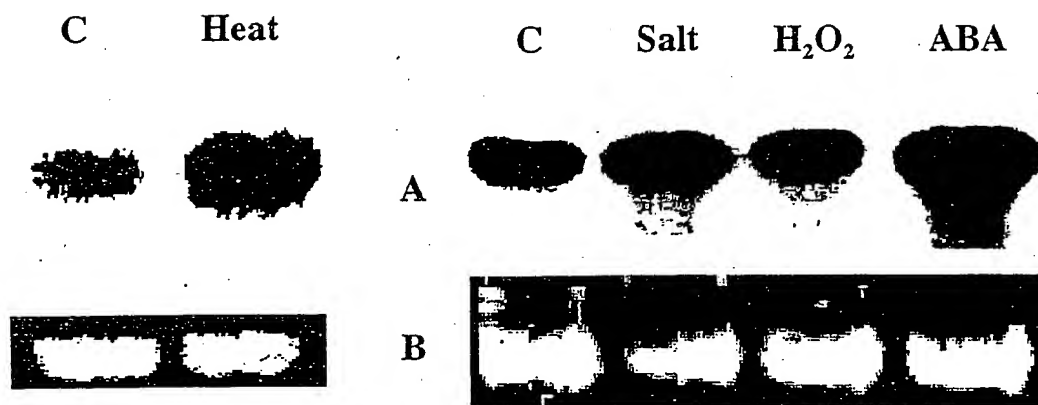
4.3-

1.9-

0.9-



*FIG. 5*



APPLN. FILING DATE: JUNE 1, 2001

TITLE: XISOMAL ASCORBATE PEROXIDASE GENE INDUCE HIGH  
TEMPER. STRESS AND A TRANSGENEIC PLANT EXHIBITING  
THERMOTOLERANCE

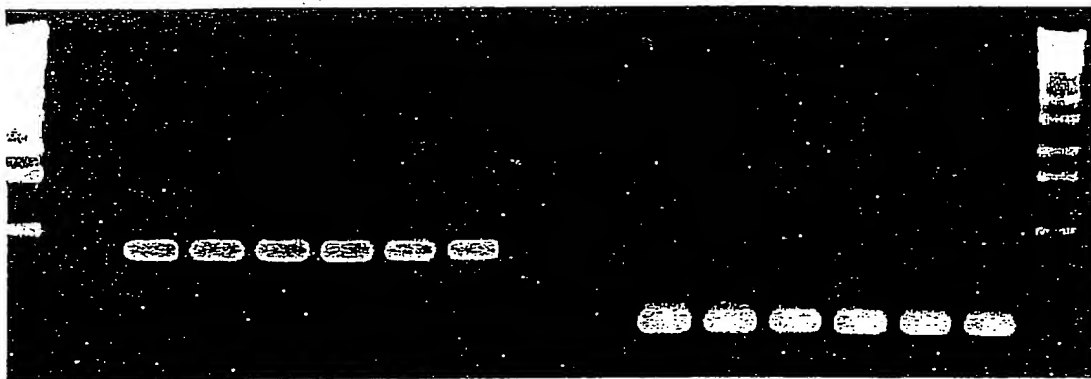
INVENTOR(S): TETSUKO TAKABE

APPLICATION SERIAL NO: UNASSIGNED

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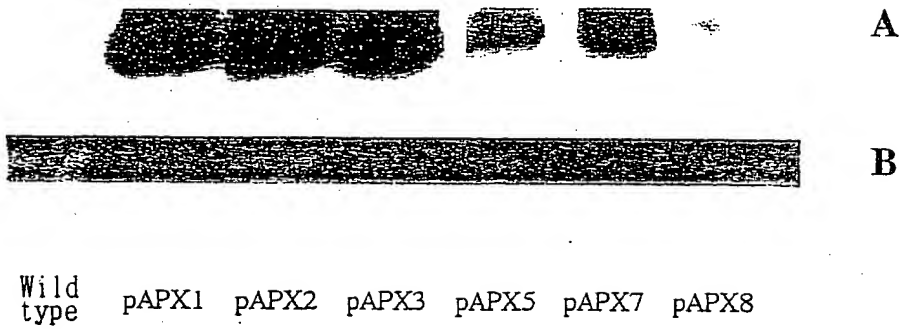
## FIG. 6

M\_WT pAPX1 pAPX2 pAPX3 pAPX5 pAPX7 pAPX8 \_ WT pAPX1 pAPX2 pAPX3 pAPX5 pAPX7 pAPX8 \_M



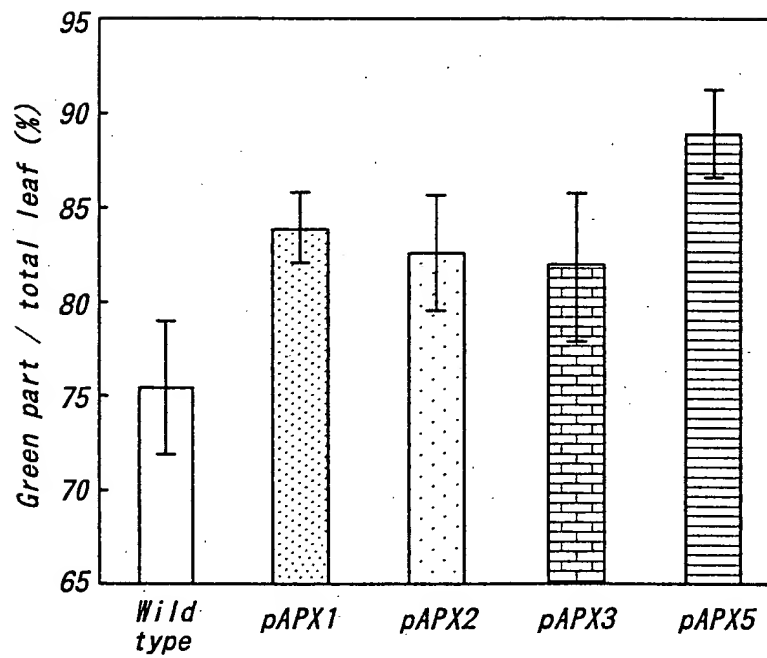
**SHEET 7 of 9**

**FIG. 7**



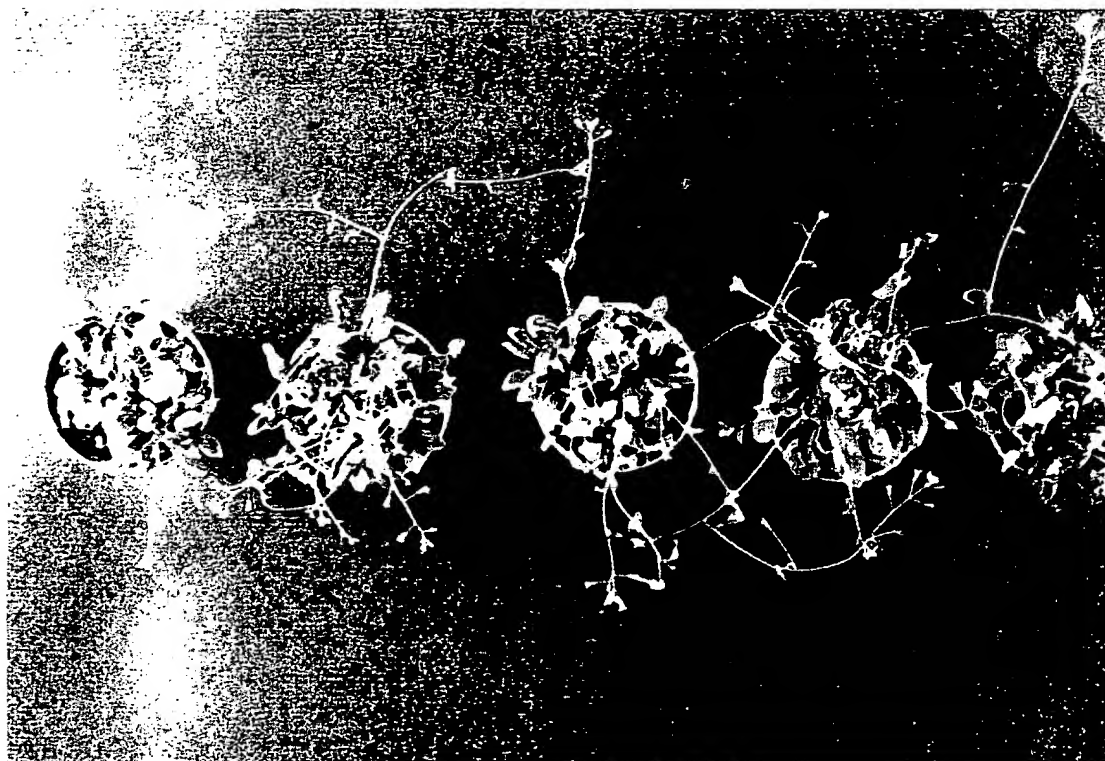
Wild type	pAPX1	pAPX2	pAPX3	pAPX5	pAPX7	pAPX8
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**FIG. 8**





**FIG. 9**



Wild type

pAPX1

pAPX2

pAPX3

pAPX5